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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN E. TURUNG

Appeal 2008-6105
Application 10/799,980
Technology Center 3600

Decided:¹ March 11, 2009

Before LINDA E. HORNER, JOHN C. KERINS and,
STEFAN STAICOVICI *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Brian Turung (Appellant) seeks our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 23-27, 31, 32, 34-36, 39, 40, 44-48, 52, 53, 55-57, 60, and 61. Claims 1-22 were cancelled. The Examiner has indicated claims 28-30, 33, 37, 38, 41-43, 49-51, 54, 58, 59, and 62-64 would be allowable if rewritten in independent form². We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We REVERSE.

THE INVENTION

The Appellant's claimed invention is an emergency navigational system for aircraft that takes partial or full navigational control when one or more actual or perceived emergency situations is detected in an attempt to overcome that situation. Spec. 2:7-8, 20-23. Claim 23, reproduced below, is representative of the subject matter on appeal.

23. An emergency navigational system that at least partially controls the navigation of an aircraft comprising
a comparator device that compares actual flight parameter data at a particular time, at a particular location, or combinations thereof to predefined flight parameter data for said particular

²The Final Rejection correctly states claim 59 would be allowable if rewritten in independent form (Office Action dated April 13, 2006), while Appellant's *Status of Claims* incorrectly lists claim 49 twice, and presumably the second listing of claim 49 was intended to be claim 59 (App. Br. 2).

time, said particular location, or combinations thereof, and

a navigational controller that takes control of at least one navigational control of said aircraft after said data compared by said comparator deviates beyond a predefined value.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Schänzer	US 3,945,593	Mar. 23, 1976
Bice	US 4,924,401	May 8, 1990

Appellant seeks our review of the following rejections:

1. The Examiner rejected claims 23-26, 34-36, 39, and 40 under 35 U.S.C. § 102(b) as being anticipated by Schänzer.
2. The Examiner rejected claims 44-48, 52, 53, 55, 56, 60, and 61 under 35 U.S.C. § 102(b) as being anticipated by Bice.
3. The Examiner rejected claims 27, 31 and 32 under 35 U.S.C. § 103(a) over Schänzer in view of Bice.
4. The Examiner rejected claim 57 under 35 U.S.C. § 103(a) as unpatentable over Bice.

ISSUES

The Examiner found that claims 23-26, 34-36, 39, and 40 are anticipated by Schänzer. Appellant contends that Schänzer does not disclose comparing actual flight parameter data at a particular time and/or particular location to predefined flight parameter data for that particular time and/or particular location.

The first issue before us is:

Has Appellant shown that Schänzer does not anticipate the claimed subject matter because Schänzer does not disclose comparing actual flight parameter data at a particular time and/or particular location to predefined flight parameter data for that particular time and/or particular location?

The Examiner found that claims 44-48, 52, 53, 55, 56, 60, and 61 are anticipated by Bice, and claim 57 is unpatentable over Bice. Appellant contends that Bice does not compare a predefined flight parameter associated with a particular time, location, or combination of the two, to a corresponding monitored flight parameter.

The second issue before us is:

Has Appellant shown that claims 44-48, 52, 53, 55, 56, 60, and 61 are not anticipated by Bice, and claim 57 is not unpatentable over Bice because Bice does not compare a predefined flight parameter corresponding to a particular time, location, or combination of the two, to a corresponding monitored flight parameter?

The Examiner found that the subject matter of claims 27, 31 and 32 is obvious over Schänzer and Bice. Appellant contends that the combination of Schänzer and Bice would not result in a system that compares actual flight parameter data at a particular time and/or particular location to predefined flight parameter data for that particular time and/or particular location.

The third issue before us is:

Has Appellant shown the Examiner erred in the rejection of claims 27, 31 and 32 because the combination of Schänzer and Bice would not result in comparing actual flight parameter data at a particular time and/or particular

location to predefined flight parameter data for that particular time and/or particular location?

FINDINGS OF FACT

We find that the following enumerated facts are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Schänzer discloses a flight control apparatus for an airplane. Schänzer, col. 1, ll. 15-29.
2. Schänzer discloses using devices to produce twelve state variable signals that include signals corresponding to both actual and commanded aircraft position (e.g. altitude) and actual and commanded aerodynamic condition of flow (e.g. angle of attack). Schänzer col. 4, ll. 50-62; col. 9, ll. 1-2.
3. Schänzer discloses using a comparator means (deviation detectors 18, 24) to compare the actual altitude 16 and actual angle of attack 10 to the corresponding commanded signals (commanded altitude 22, and commanded angle of attack 20) to produce deviation signals (elevation deviation signal Δh , and angle of attack deviation signal $\Delta \alpha$). Schänzer, col. 4, ll. 62-67; col. 6, ll. 30-39; col. 8, ll. 18-22; Fig. 1.
4. Schänzer does not disclose any of the following actual flight parameter data as being associated with a location or a time: actual altitude, commanded altitude, actual angle of attack, and commanded angle of attack. Schänzer, *passim*; Fig. 1; description

of twelve state variables at col. 7, l. 4 to col. 8, l. 32.

5. Schänzer discloses that in response to deviation signals, the twelve state variables, when properly filtered and connected, can be applied in linear combinations to both the thrust and aerodynamic condition of flow actuators to provide accurate control of trajectory and aerodynamic condition of flow, and reduce the deviations. Schänzer, col. 4, l. 67 to col. 5, l. 31; col. 1, ll. 15-29.
6. Schänzer compares actual altitude and angle of attack, to commanded altitude and angle of attack, none of which are associated with a time or location, and does not compare an actual flight parameter associated with a time, location (or combination of both) to a predefined flight parameter. Schänzer, *passim*.
7. Bice discloses a method and an apparatus for preventing inadvertent aircraft ground collisions with a computer operated auto recovery system. Bice, col. 1, ll. 11-15.
8. Bice discloses the pilot preselects a floor altitude that is “constant,” and represents the lowest point of recovery, and does not disclose any association of the preset floor altitude with a time or location. Bice, col. 4, ll. 10-13; col. 8, ll. 58-60; Fig. 4.
9. Flight computer 40 monitors flight states (e.g. true airspeed, altitude, flightpath angle) and uses an algorithm to calculate ΔZ , the amount of altitude required for the recovery maneuver (“fly up”). Bice, col. 8, l. 51 to col. 9, l. 27; Fig. 3; col. 13, ll. 26-28.
10. Flight computer 40 adds ΔZ to the floor altitude to determine aircraft “flyup” altitude, in other words, aircraft flyup altitude is

the sum of the pilot's preset floor altitude and the amount of altitude required for the recovery maneuver (ΔZ) based on aircraft flight state (air speed, etc). Bice, Fig. 1; Fig. 4.

11. Flight computer 40 monitors actual altitude, and compares it to flyup altitude, and initiates an automatic aircraft flyup when current altitude is less than or equal to the flyup altitude. Bice, col. 2, ll. 58 to col. 3, l. 1; Fig. 4.
12. Bice discloses any source may be used for actual altitude, including Above Ground Level (AGL) altitude from a radar altimeter, terrain altitude from a digital terrain database, or Mean Sea Level (MSL) altitude from a source such as barometric altitude. Bice, col. 13, ll. 40-56; col. 14, ll. 43-47.
13. Bice discloses the altitude data sources of Fact 12 above are only used for calculation of actual altitude, and does not disclose any of these sources being used as a predefined flight parameter.
14. Bice discloses only one predetermined flight parameter, floor altitude, and it is not associated with a time or location; therefore, Bice does not compare a predefined flight parameter corresponding to a particular time, location, or combination of the two, to a corresponding monitored flight parameter.

PRINCIPLES OF LAW

Appellant's Burden

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir.

2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

ANALYSIS

Rejection of claims 23-26, 34-36, 39, and 40 under 35 U.S.C. 102(b) as being anticipated by Schänzer

Claim 23 includes the requirement that actual flight parameter data “at a particular time, at a particular location, or combinations thereof” be compared “to predefined flight parameter data for said particular time, said particular location, or combinations thereof.” A person of ordinary skill in the art would understand these terms to mean the flight parameter data must be associated with a specified time, a specified location, or a combination of the two.

Schänzer discloses a flight control apparatus for an airplane that senses when the actual aircraft trajectory or aerodynamic condition of flow differs from the commanded trajectory or condition of flow, and when a deviation is detected, attempts to reduce that deviation (Facts 1-3, 5). In Schänzer’s process, two actual values are compared to commanded values: altitude and angle of attack (Fact 3). Schänzer does not disclose either altitude or angle of attack as associated with a specific location or time (Fact 4). Similarly, the Examiner’s finding that Schänzer’s control of elevation (altitude) discloses a particular location as recited in claim 23 is incorrect. Altitude provides no information associated with a time, and provides

positioning information in only one dimension (height), so that an aircraft at a given altitude could be located anywhere above the earth at that height. Altitude alone does not specify flight parameter data “at a particular location” as required by the claim.

Schänzer does not compare an actual flight parameter “at a particular time, at a particular location, or combination thereof” to a predefined flight parameter (Fact 6). Because Schänzer does not meet each element of the claim, Schänzer does not anticipate claim 23. Likewise, Schänzer does not anticipate dependent claims 24-26, 34-36, 39, and 40 by virtue of their dependence on claim 23.

Rejection of claims 44-48, 52, 53, 55, 56, 60, and 61 under 35 U.S.C. 102(b) as being anticipated by Bice

Similar to claim 23, claim 44 requires comparing a predefined flight parameter corresponding to a particular time, location, or combination of the two, to a corresponding monitored flight parameter.

Bice discloses a method and an apparatus for preventing inadvertent aircraft ground collisions by computer operated auto recovery (Fact 7). The flight computer calculates aircraft “flyup” altitude and initiates the automatic recovery when the aircraft is at or below flyup altitude (Facts 7-11). Bice teaches that flyup altitude is based on a summation of the altitude required to perform the flyup maneuver and a floor altitude (as determined by the pilot) (Facts 9, 11).

Bice discloses only one actual flight parameter that is compared to a predefined flight parameter: floor altitude (Fact 14). The floor altitude preset by the pilot (predefined) is not associated with a time or location (Fact

9). Based on this, Bice does not compare a predefined flight parameter associated with a particular time, location, or combination of the two, to a monitored flight parameter (Fact 14).

We question the Examiner's assertion that a digital terrain database provides a flight parameter associated with a particular location; however, we need not decide this issue. Assuming, *arguendo*, that a digital terrain database provides altitude information at a particular location, Bice discloses the digital terrain database is used only for determining actual altitude, not as a predefined flight parameter (Fact 12, 13). As discussed above, Bice only discloses one predefined flight parameter, floor altitude, and it is not associated with a time or location (Fact 8, 14). Based on this, Bice does not compare a predefined flight parameter corresponding to a particular time, location, or combination of the two, to a corresponding monitored flight parameter as required by the claim (Fact 14).

Because Bice does not meet each element of the claim, Bice does not anticipate claim 44. Likewise, Bice does not anticipate dependent claims 45-48, 52, 53, 55, 56, 60, and 61 by virtue of their dependence on claim 44.

Rejection of claims 27, 31 and 32 under 35 U.S.C. 103(a) over Schänzer in view of Bice

Claims 27, 31, and 32 depend from claim 23 and also contain the limitation that the predefined flight parameter data be associated with at a particular location, particular time, or combination of the two. As we determined in the analysis of claims 23, *supra*, Schänzer does not disclose a predefined flight parameter corresponding to a particular location, time or combination of the two. Similarly, as we determined in the analysis of claim

44, *supra*, Bice does not disclose a predefined flight parameter corresponding to a particular location, time or combination of the two. Because neither reference teaches use of a predefined flight parameter corresponding to a particular location, time or combination of the two, and the rejection does not specify how a person of ordinary skill in the art would have modified the combination of Schänzer and Bice to meet this limitation; the rejection does not meet this aspect of the claims. The rejection of claims 27, 31, and 32 must be reversed.

Rejection of claim 57 under 35 U.S.C. 103(a) as unpatentable over Bice

Claim 57 depends from claim 44. We reversed the rejection of claim 44 because it was not anticipated by Bice, and, with respect to dependent claim 57, Bice suffers from the same shortcoming. Because the rejection does not recite a modification of Bice to address the limitation found missing from claim 44, as discussed *supra*, we must also reverse the rejection of claim 57.

CONCLUSION

Appellant has shown that Schänzer does not anticipate the subject matter of claims 23-26, 34-36, 39, and 40, because Schänzer does not disclose comparing actual flight parameter data at a particular time and/or particular location to predefined flight parameter data for that particular time and/or particular location.

Appellant has shown that claims 44-48, 52, 53, 55, 56, 60, and 61 are not anticipated by Bice, and claim 57 is not unpatentable over Bice because Bice does not compare a predefined flight parameter associated with a

particular time, location, or combination of the two, to a corresponding monitored flight parameter.

Appellant has shown the Examiner erred in the rejection of claims 27, 31 and 32 because the combination of Schänzer and Bice would not result in a system that compares actual flight parameter data at a particular time and/or particular location to predefined flight parameter data for that particular time and/or particular location.

DECISION

We reverse the decision rejecting claims 23-27, 31, 32, 34-36, 39, 40, 44-48, 52, 53, 55-57, 60, and 61.

REVERSED

vsh

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